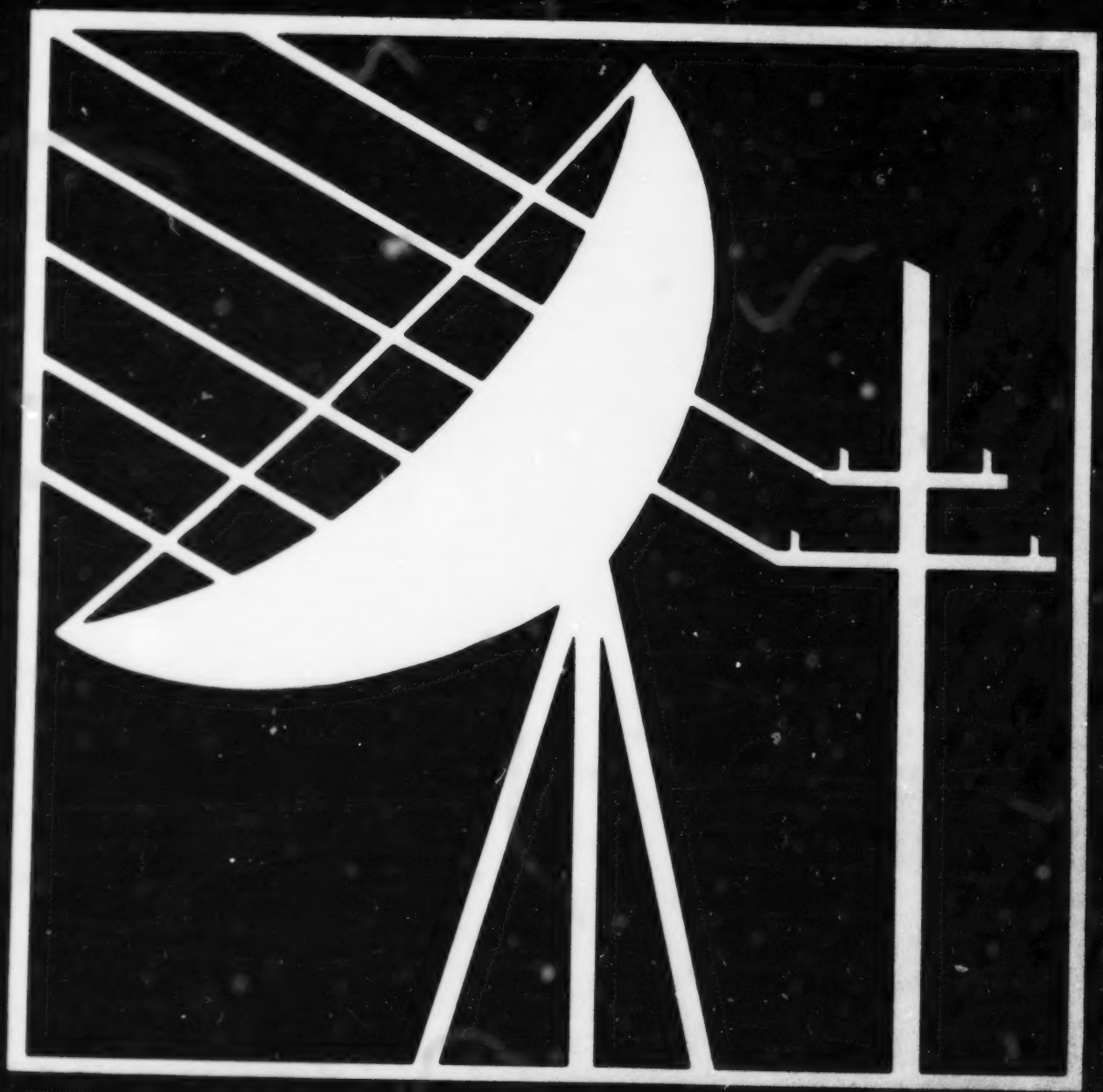

TELECOMMUNICATIONS IN NORTHERN ALBERTA

Alberta

Conference Report
Athabasca: Oct. 29 - 31, 1986

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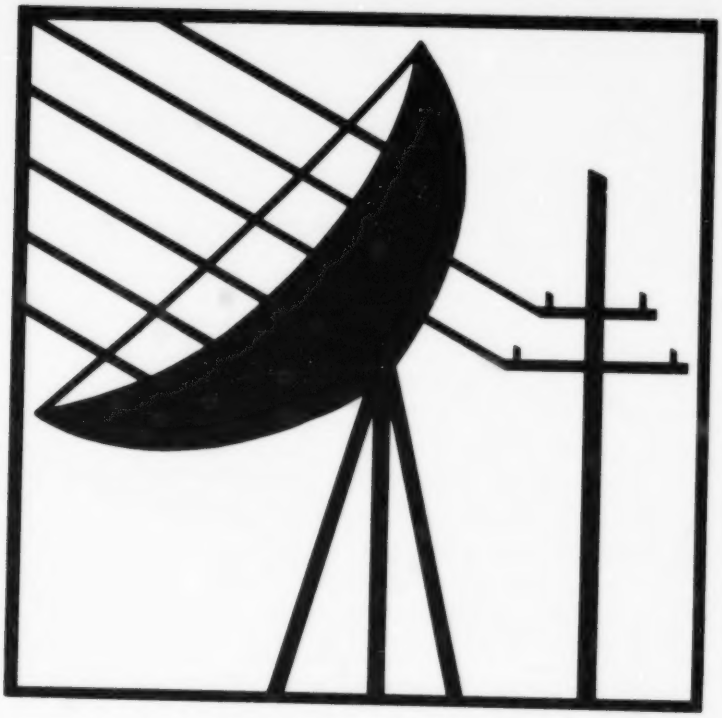

TELECOMMUNICATIONS IN NORTHERN ALBERTA

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Alberta
NORTHERN ALBERTA
DEVELOPMENT COUNCIL

2nd Floor, Provincial Building, 9621 - 96 Avenue, Postal Bag 900-14, Peace River, Alberta, Canada T0H 2X0 403/624-6274

February, 1987

Because of vast distances and the diverse developing nature of Northern Alberta, telecommunications advances have long been vital to northerners. To review the current state of the art as it applies to the North, the Northern Alberta Development Council sponsored a Conference on Telecommunications in Northern Alberta in Athabasca, October 29-31, 1986.

More than 100 northern business, community and educational leaders attended the Conference and provided public input into the review of television, telephone and distance education issues and needs in Northern Alberta. Current developments and future trends were outlined by experts in the various topic areas and small group sessions allowed delegates to provide input to subsequent Northern Alberta Development Council recommendations.

The recommendations, found at the end of this Conference Report, will be discussed with relevant government departments and delivery agencies in an effort to improve telecommunications in Northern Alberta.

Bob Elliott

Bob Elliott, MLA
Chairman

Northern Alberta Development Council 1986/87

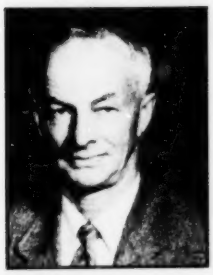
Bob Elliott, MLA
Chairman
Beaverlodge

Hon. Al "Boomer" Adair
Minister Responsible
for Northern Development
Peace River

Cec Jardine
Vice-Chairman
Valleyview

Mary Bennett
Elk Point

Gene Dextrase
High Level



John Drobot, MLA
St. Paul

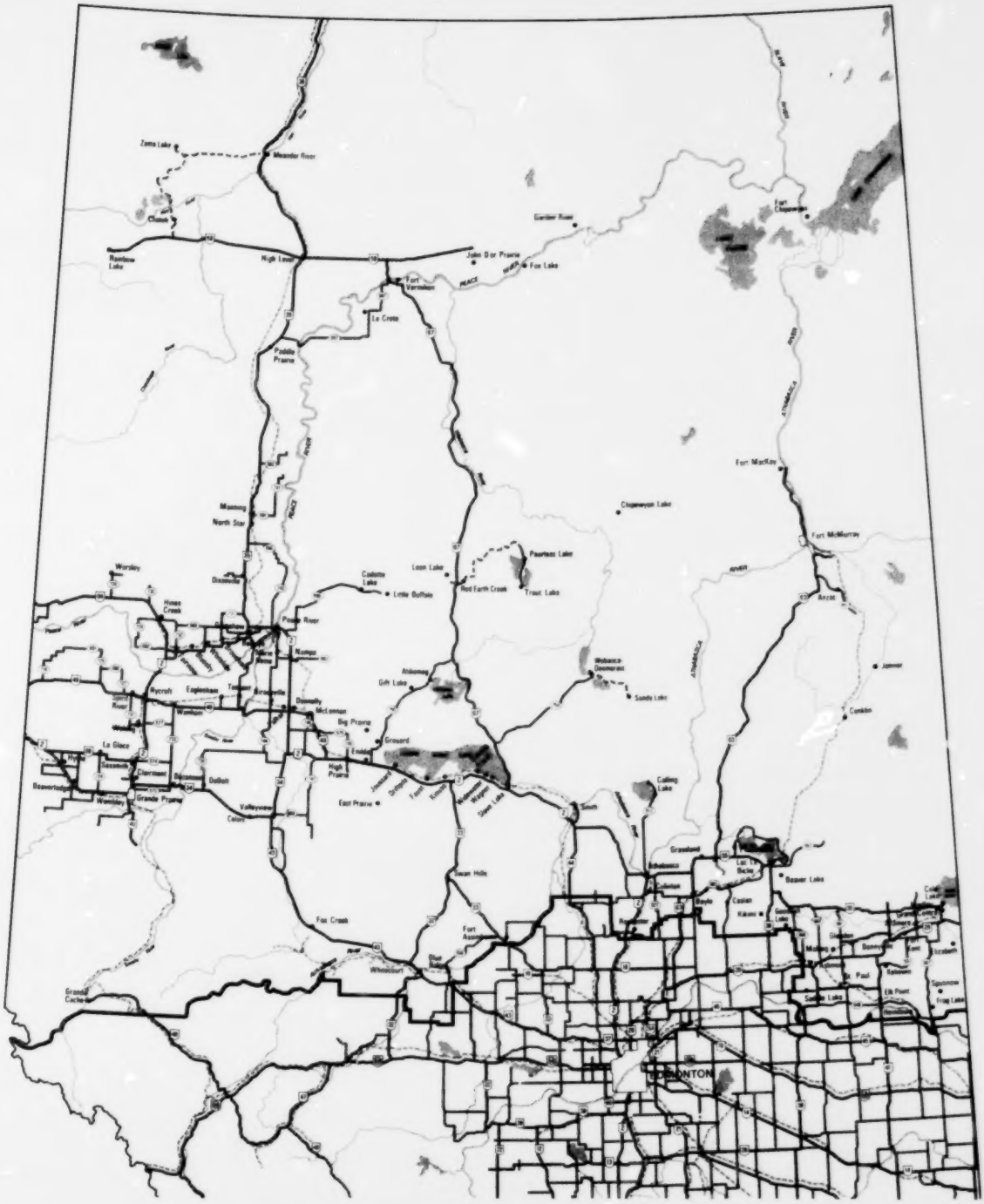
Fred Gingerich
Athabasca

Bernie Hornby
Fox Creek

Vince Rice
Kinuso

Ted Sonntag
Hotchkiss

Evelyn Thunder
Atikameg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Fort Vermilion
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Paddle Prairie
Manning
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Dixonville
Hines Creek
Peace River
Berwyn
Wanham
Wembley
Grande Prairie
Beaverlodge
La Glace
Wanham
Demmitt
Valhalla Centre
Calais
Donnelly
McLennan
Girouxville
Falher
Grouard
High Prairie
East Prairie
Gift Lake
Atikameg
Cadotte Lake
Little Buffalo
Loon Lake
Red Earth Creek
Peerless Lake
Trout Lake
Wabasca-Desmarais
Sandy Lake
Chipewyan Lake
Fort MacKay
Fort McMurray
Anzac
Janvier
Conklin
Calling Lake
Grassland
Athabasca
Canton
Boyle
Caslan
Kikino
Lac La Biche
Beaver Lake
Cold Lake
Bonnyville
Elk Point
Lindbergh
Fort Assiniboine
Barrhead
Mayerthorpe
Whitecourt
Fox Creek
Swan Hills
Grande Cache
St. Paul
Smoky Lake
Vilna
Two Hills
Myrnam
Provost
Vermilion
Lloydminster
Wainwright
Viking
Edmonton
Sherwood Park
Fort Saskatchewan
Leduc
Devon
Stony Plain
Spruce Grove
Morinville
Gibbons
Redwater
Bon Accord
Legal
Westlock
Barrhere
Onoway
Alberta Beach
Lac Ste. Anne
Mayerthorpe
Whitecourt
Fox Creek
Swan Hills
Valleyview
Sexsmith
Grande Prairie
Beaverlodge
Wembley
Hythe
Dawson Creek
Fairview
Peace River
Manning
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Cold Lake
Bonnyville
Elk Point
Lindbergh
Fort Assiniboine
Barrhead

Agenda

Day 1 — October 29, 1986

10:30 am Conference Registration

1:00 pm OPENING REMARKS
- Dr. Bob Elliott — MLA, Chairman, NADC, Beaverlodge

1:15 pm OPENING ADDRESS
- Hon. Les Young — Minister, Alberta Technology, Research and Telecommunications

1:45 pm PLENARY SESSION I: Background Report
Moderator: Cec Jardine, NADC, Valleyview

"What Northern Albertans Said About Telecommunications."
- Bill Page — W.J. Page & Associates Ltd., Edmonton

3:15 pm SELF-GUIDED VISITS
Telecommunications Resource Centre, Athabasca University
— A Teleconference Education Experience
— Business "Electronic Incubators"
— Active Display Area:
  - AVC Grouard Compuvan
  - Cellular Radio
  - Satellite Futures
— Tours of Athabasca University

6:30 pm Reception

7:00 pm Dinner
Moderator: Vince Rice, NADC, Kinuso

8:00 pm DINNER ADDRESS
"The Communications Edge in Northern Alberta"
- Ed Polanski — Chief Executive Officer, QCTV Cablevision Ltd., Edmonton

8:45 pm PLENARY SESSION II: Television
"Satellites and Scrambling"
- John Feltmate — Techno-Economic Analyst, Canadian Radio-Television and Telecommunications Commission, Ottawa (via satellite broadcast and audio return)

Day 2 — October 30, 1986

9:30 am PLENARY SESSION III: Distance Education
Moderator: Gene Dextrase, NADC, High Level

PANEL PRESENTORS:
- Peter Senchuk — President and Chief Executive Officer, ACCESS Alberta, Edmonton
- Des Berghofer — Assistant Deputy Minister, Alberta Advanced Education, Edmonton
- Terry Morrison — President, Athabasca University, Athabasca

10:30 am QUESTION PERIOD

11:00 am PLENARY SESSION IV: Telephone
Moderator: Mary Bennett, NADC, Elk Point
"Telephone Issues and Options"
- H.M. Neldner — President, Alberta Government Telephones, Edmonton

12 Noon Luncheon

12:45 pm LUNCHEON ADDRESS
Moderator: Fred Gingerich, NADC, Athabasca

"The Growing Personal Communications Market"
- Jack Hillier — Vice-President, Western Canada, Northern Telecom Canada Limited, Edmonton

1:30 pm CONCURRENT SESSIONS

Session 1 — TELEVISION ISSUES & DELIVERY APPROACHES

Moderator: John Drobot, MLA, NADC, St. Paul

- Ray Flett — District Manager, Federal Department of Communications, Edmonton
- Dick Dutka — Regional Engineer for Alberta, Canadian Broadcasting Corporation, Edmonton
- Gary Christopherson — President, Glomma Cablevision Ltd., Grimshaw
- Del Harbourne — Mayor, Manning
- Bert Crowfoot — General Manager, Aboriginal Multi-Media Society of Alberta, Edmonton

Session 2 — EXISTING AND NEW TELEPHONE SERVICES

Moderator: Bernie Hornby, NADC, Fox Creek

- J.D. McDonald — Vice-President, Corporate Development and Regulatory Affairs, Alberta Government Telephones, Edmonton
- Harry Stech — Assistant Vice-President, Business Sales and Service, Alberta Government Telephones, Calgary
- Del Lippert — President, NovAtel Communications Ltd., Calgary

Session 3 — NORTHERN DISTANCE EDUCATION PROGRAMS

Moderator: Ted Sonntag, NADC, Hotchkiss

- Dan Vandermeulen — Vice-President, Alberta Vocational Centre, Grouard
- Karl Gongos — President, Community Vocational Centres, Slave Lake
- Ross Paul — Vice-President, Academic, Athabasca University, Athabasca
- Brent Pickard — Director, Program Planning and Development, Alberta Advanced Education, Edmonton

3:30 pm REPEAT OF CONCURRENT SESSIONS

6:30 pm Reception

7:00 pm Dinner
Moderator: Cec Jardine, Vice-Chairman, NADC, Valleyview

8:00 pm ENTERTAINMENT
"Nobody Uses Radio Anymore!"
The Comedy Commission, Edmonton

Day 3 — October 31, 1986

9:30 am PLENARY SESSION V
Moderator: Mary Bennett, NADC, Elk Point

"Steps Toward a Telecommunications Future for Northern Alberta"

- Bill Page — W.J. Page and Associates Ltd., Edmonton

10:00 am SMALL GROUP DISCUSSION

"Recommendations to NADC"

11:30 am SMALL GROUP REPORT BACK

12:15 pm CLOSING COMMENTS

- Dr. Bob Elliott — MLA, Chairman NADC, Beaverlodge

12:30 pm Buffet (Performing Arts Centre)

Conference Opening

The Conference was opened by Chairman, Bob Elliott, MLA for Grande Prairie. He welcomed delegates, prophesied a successful conference and introduced Leo Piquette, MLA, Athabasca-Lac La Biche and Tony Schinkinger, Mayor of Athabasca.

Both Mr. Piquette and Mr. Schinkinger expressed welcome and good wishes to conference and delegates.

Photos:
(Top) Bob Elliott, MLA, Chairman of the Northern Alberta Development Council.
(Middle) Telecommunications was what the Conference was all about.
(Bottom) Beautiful Athabasca, location of the Conference.

Opening Address

Les Young

The Conference's opening address was presented by Hon. Les Young, Minister, Alberta Technology, Research and Telecommunications. Mr. Young was introduced to delegates and welcomed to the conference by Council Chairman, Bob Elliott.

Mr. Young said Canada has been in the forefront of developing telecommunications technology ever since Alexander Graham Bell invented the telephone in 1874 and placed the first "long-distance" call in 1876. The Minister, himself, had his own first involvement in telecommunications when his father, with neighboring farmers, started a telephone co-op during Mr. Young's childhood.

"Telecommunications has come a long way since then and this growth had been crucial to our country's development because of Canada's vast size, challenging climate, small and scattered population and varying terrain," Mr. Young told delegates.

He went on to say that telecommunications affects everyone in the development of business, culture, education and entertainment. He cited some interesting statistics:

- 98% of Canadians have radios.
- 97% have television.
- 23% of Albertans have more than one television set.
- 99.1% of Canadians have access to tv through the CBC.
- 5.5 million Canadians subscribe to cable.
- Canada's broadcasting system is the most technically advanced in the world.
- Sixty-eight cable companies serve 539,000 subscribers in Alberta.
- NovAtel, an Alberta Company, created the first full roaming cellular mobile telephone system in North America.
- Alberta Government Telephones (AGT) was established in 1906 and is the third largest phone company in Canada.
- ACCESS Network, established in 1973, is available to 500,000 cable subscribers in 100 communities.
- ACCESS is also available to satellite dish users.

Mr. Young pointed out that the divided jurisdictional responsibilities of the provincial and federal governments affect the degree of influence the province has over communications development. Alberta has jurisdiction over provincial telecommunications services, but broadcasting and cable systems which redistribute signals come under federal jurisdiction. This is also true for national companies like CNCP Telecommunications.

Both governments have regulatory agencies responsible for implementing government policies. In Alberta, the agency is the Alberta Public Utilities Board. The Canadian Radio-Television and Telecommunication Commission (CRTC) takes charge of most federal policy concerns. Mr. Young pointed out that since Alberta does not have direct responsibility re the availability of broadcasting services, there is not a great deal the province can do for northern Albertans in this regard.

Photos:
(Top) Hon. Les Young, Minister of Technology, Research and Telecommunications.
(Middle and Bottom) Opening Address.

The Department of Technology, Research and Telecommunications

This newly created department has a mandate to provide infrastructure, information, financial and other assistance for technological development and for the commercialization of applied research. A prime objective is to see that all Albertans have quality communication and information systems and services. Mr. Young said he sees this as an important commitment to communities outside the large urban centres.

Because technology can help to close the gap between remote and settled areas and could provide employment opportunities as well, the Department's mandate is an important one. At this time, he said, some $900 million in revenue can be attributed to high technology in Alberta. About 9,000 Albertans already work in this field and that number is expected to grow dramatically. He added that this figure does not include AGT or any of the major oil companies.

In noting that extended flat-rate calling and individual line service are AGT as well as government commitments, he cautioned that improved service means additional cost. "I conclude that telephone charges must be structured carefully to ensure that those who use the service most, pay accordingly," he said. Mr. Young observed, however, instances of cross-subsidization now in place:

- Urban subscribers subsidize rural users.
- Toll charges subsidize local charges.
- Business subscribers subsidize residential users.

ACCESS and RITE

The Alberta Educational Communications Corporation (ACCESS) was established to consolidate and upgrade various educational media in the province. ACCESS productions now are distributed throughout the world and are widely available within the province. After satellite delivery became available, the government provided one-time grants to 120 rural area schools to enable installation of satellite dishes. Educational instruction (telecourses) is available now throughout the province as is a "Homework Hotline."

Still another unique provincial government telecommunications service is the Regional Information Telephone Enquiries Network (RITE). This system allows Albertans to access government at no cost. But, Mr. Young went on, the government of Alberta is not satisfied with what has already been accomplished here. "The rest of the world is moving forward and our challenge is to keep up and seize some niches here and there. We can be leaders in certain areas by developing our strengths. That is our challenge," he stated.

He wished the delegates well in their deliberations and looked forward to receiving their comments and recommendations.

What Northern Albertans Said About Telecommunications

Bill Page

Bill Page, of W.J. Page and Associates Ltd., introduced by Councillor Cec Jardine, spoke at the first plenary session on Day 1. His company had been responsible for a study conducted among northern Albertans on behalf of the Northern Alberta Development Council. Mr. Page shared the results of this study with delegates:

The objectives of the study were:

- To identify, scope and describe the key telecommunications issues in northern Alberta
- To present options for development considering northerners' objectives, technology, policy and regulations
- To investigate innovative programs in Alberta and other jurisdictions
- To examine how technology may aid in the next decade of telecommunications in northern Alberta

He pointed out that "telecommunications," for the purposes of the study, refers to telephone, radio, television, distance education, mobile telephones and telex.

The Study was conducted among a cross-section of northerners, communications regulators and suppliers. Questionnaires and telephone interviews were used. Among the major findings were:

- Telecommunications are important to those who live and work in the North.
- Telecommunications technology is available to meet most demands, but regulations and economics must be recognized and accommodated.
- Northern Alberta is a collection of diverse communities each requiring specific solutions.
- Planning and delivery of telecommunications should be focused from a northern perspective.
- Television, radio and telephone service all need improvement.
- Mobile telephone and telex services seem to be satisfactory.
- Innovative approaches to capitalize on distance education and other telecommunications services are necessary.
- Television is the single largest concern of participants in the survey.
- Television is primarily used for entertainment and information.
- Priorities for improvement in television should be educational programming, cost, number of stations.
- Specific improvements desired were:
  - — Canadian content
  - — Children and family entertainment programming
  - — PBS-type channels
  - — Local (northern) news.
- The second most requested need was seen as radio.
- Radio is also primarily used for information and entertainment.
- The greatest need is seen as obtaining a greater number of FM stations.
- Telephones are used for social, business, emergency, convenience and family purposes.

Photos:
(Top) Bill Page of W.J. Page Associates.
(Middle) Plenary Session I.
(Bottom) Cec Jardine, Vice-Chairman of the Northern Alberta Development Council.

- Long-distance and flat rate costs are the key areas needing improvement.
- Party lines and rural services are also important.
- Distance education is important.
- Distance education is not highly used.
- Many northerners do not know about the availability of distance education and do not know what it is.
- Many northerners do not know who delivers distance education or how this is accomplished.
- Data base access, and reference materials should be improved.
- There should be increased access to university courses.
- There should be an improved computer facility.
- Telephone costs connected to distance education should be lowered.
- ACCESS should be universally available in the home.
- Television should provide more educational programs.

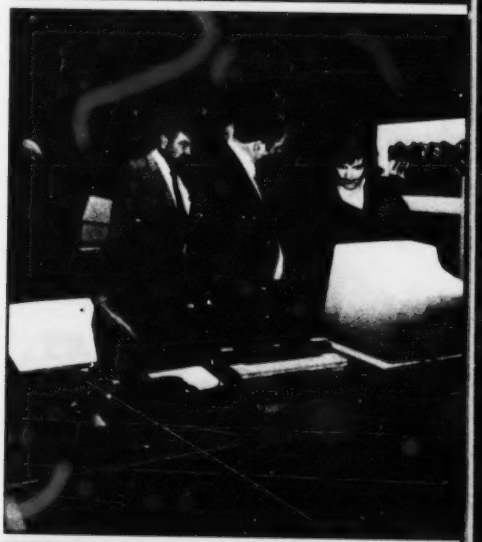
Mr. Page noted that the survey raised several key issues most of which he hoped would be addressed by the experts at the Telecommunications Conference. These were as follows:

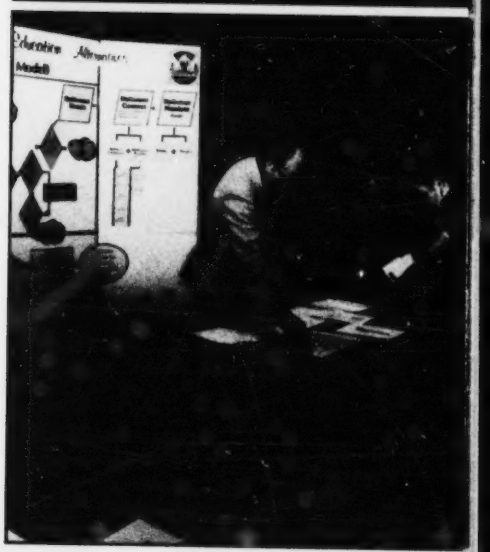
- Given regulatory and economic realities, how can additional tv channels offering a mixed blend of programming be provided?
- Where is the focus for delivery and planning of tv services?
- What impact will scrambling have?
- How do television and distance education work together?
- How can radio, particularly FM, be effectively and economically distributed across northern Alberta?
- Can long distance telephone charges be lowered?
- Can extended flat-rate calling (EFRC) be extended to more communities?
- Can communications in northern Alberta (around current rate structures) be improved?
- Can individual line service (single party) be put in place for party line users?
- How can the population be educated about distance education services?
- Should there be a flat-rate calling subsidy for distance education users?
- How can enhanced two-way communications be put in place?
- Is there an underlying but real need for distance education and how should this be assessed?
- Who is to provide the lead in distance education?

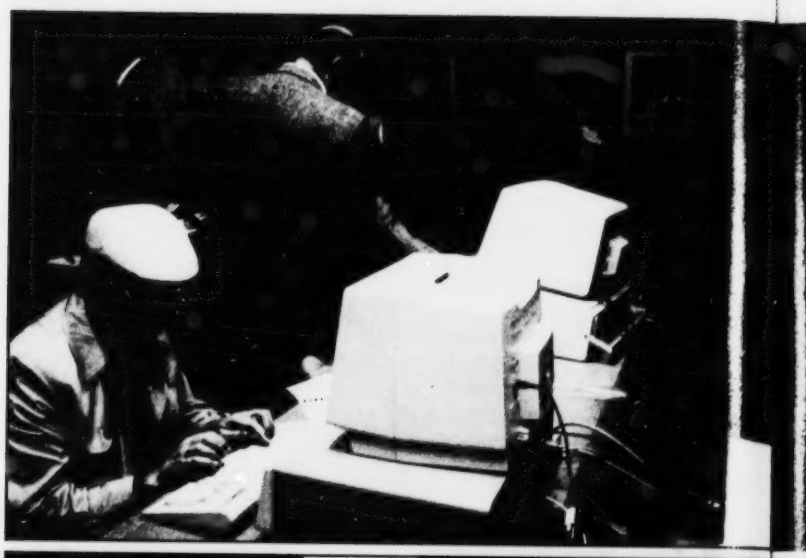
Mr. Page, in conclusion, wished delegates a successful conference.

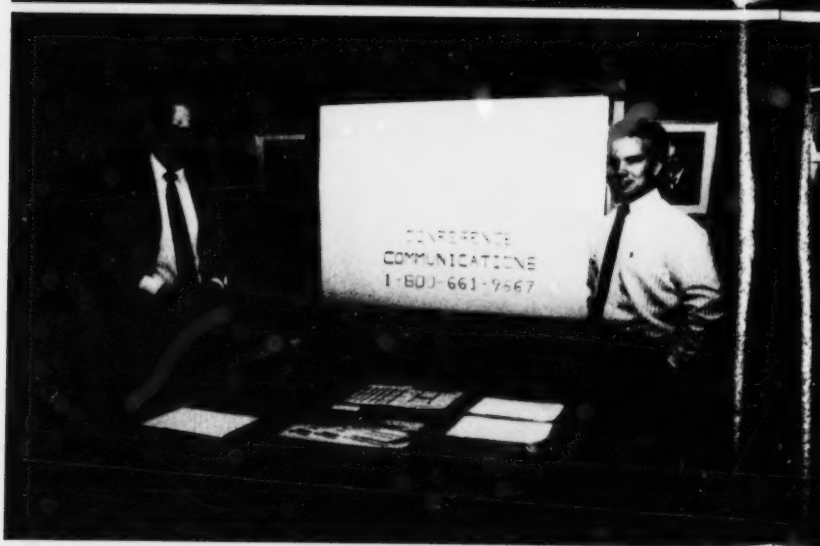
Tour of Athabasca University

Guided tours of Athabasca University were offered on Day 1. There, delegates were treated to a fine display of all the latest in telecommunications technology.





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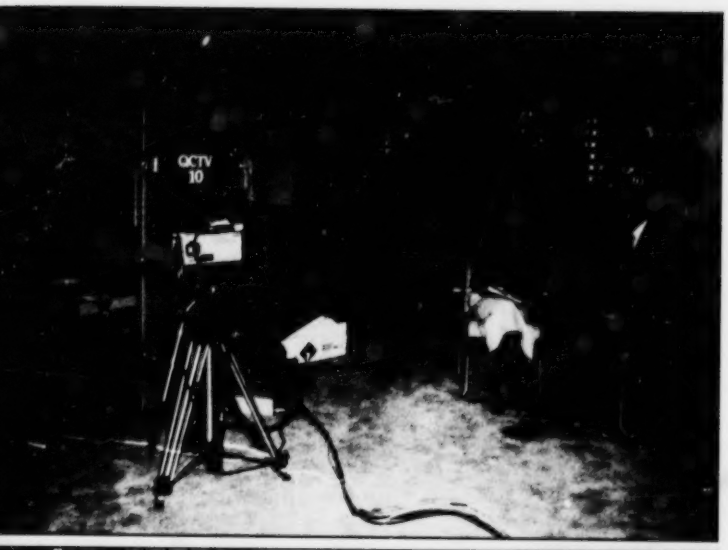
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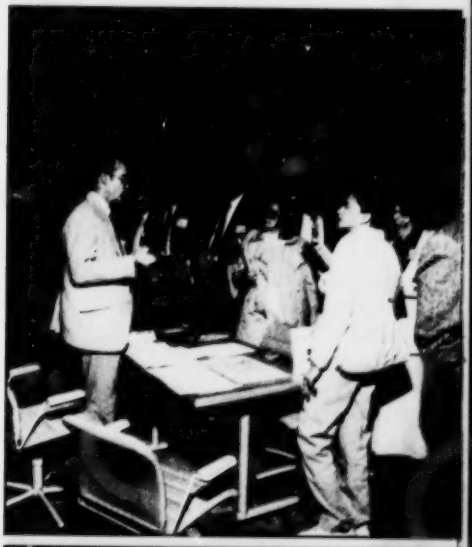

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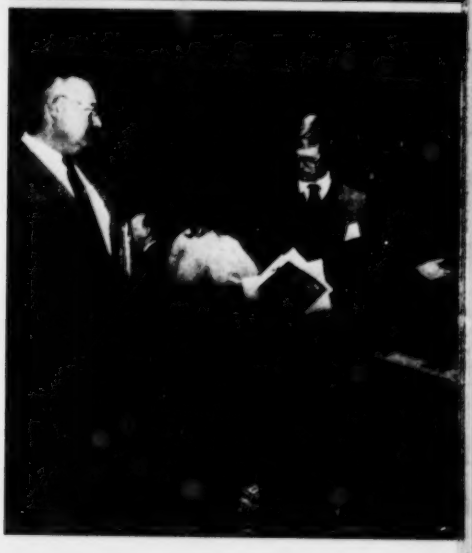


The Communications Edge in Northern Alberta

Ed Polanski

Ed Polanski, President, QCTV Cablevision Ltd., was the dinner speaker on October 29. He was introduced by Council member, Vince Rice.

Mr. Polanski opened his remarks with congratulations to the Northern Alberta Development Council for having commissioned the telecommunications study, saying, "I believe that what you're undertaking is vitally important but you must ask the right questions and go in the right direction. You must ask how to build a communications edge in northern Alberta — because I don't believe you have one now."

With regard to the report and the study, he said that, in his view, these could have been wider in scope. The report, he said, creates three scenarios:

- Modified status quo
- Co-ordinated growth
- Independent action

None of these scenarios, however, jibe with the traditional development patterns. "Communications grows as it must grow. Growth is achieved by threatening the existing status quo in a provocative way," he told delegates.

To reinforce his premise, Mr. Polanski offered the examples of Ontario (which erected a cable system without paying attention to the regulation process) and a Winnipeg hotel chain (which put up a satellite dish first and asked for permission afterward).

Photos:
(Top) Ed Polanski, President, QCTV Cablevision Ltd.
(Middle) Vince Rice, The Northern Alberta Development Council.
(Bottom) John Feltmate, Techno-Economic Analyst with the CRTC live on tv from Ottawa.

His advice to northerners was motivating and perhaps revolutionary: "If you have a problem in the North, then you don't have the time to talk to the minister or the CRTC. If you want action, and you know you are right, never mind the regulatory process. Just go ahead and do it."

He went on to say that, usually, problems are not with the people but, rather, are with the structure. In pointing out inconsistencies in the regulatory process, he noted that the dictionary definition of "broadcast" includes dissemination of information by newspapers. "Why doesn't the CRTC licence the newspapers?" he asked.

Mr. Polanski had more criticism of the CRTC and claimed this body often works in its own interests rather than in the interests of citizens. He said the Commission had its genesis in the 1920s in order to regulate and control certain religious sect warfare taking place on Ontario and Quebec radio stations. "In this day, there are no religious broadcasting stations in Canada, but from that beginning the CRTC now regulates nuts and bolts in Fort Vermilion, Alberta."

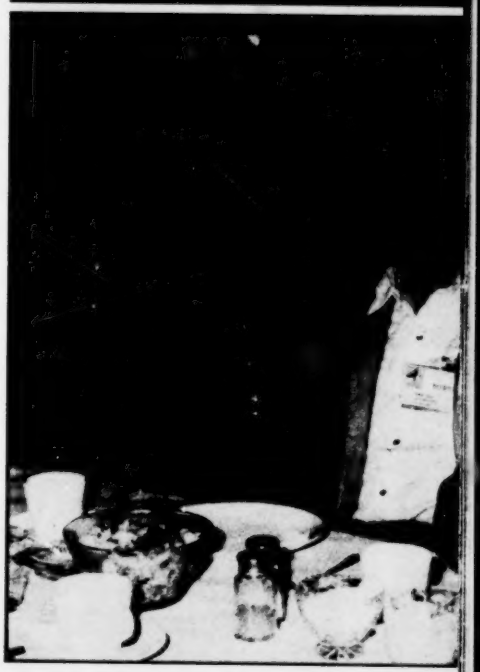
On a more conciliatory note, Mr. Polanski praised the NADC saying, "I believe your conference is one of the most important you've undertaken in a long time. But I'd like you to look more at the video side of the question. Some futurist forecast should be injected into the report because you can't lock yourself into the status quo of broadcasting."

He believes that existing technologies will wear out, that cable can go no further, that satellite technology is just around the corner. He thinks it is possible to provide all of Canada with 25

channels within the next decade. For these reasons, he sees the lack of information regarding these new things as a serious omission in the Telecommunications Report. "The future of telecommunications goes further than the report suggests," he stated.

Mr. Polanski had more to say: "Entertainment tv has gone about as far as it can go in most places. The real growth area is in the industrial, commercial and private use of video. It is inappropriate not to address, for example, the medical use of tv. Tv could be used to provide in-service training from big city teaching hospitals to small rural ones. And what about agriculture — the number two industry? Farmers are entitled to some kind of in-service tool too — and that includes accounting, soil management, weather news, and so on."

His final word alluded to fairness. "AGT should be incensed that you are asking for subsidized rates. You are saying that Calgary and the rest of the province must subsidize the North, but Edmonton doesn't have to because it has its own system. If subsidization must come from government, it must be done in a fair way and you must look at things in a fair way."



Photos:
(Top) Bill Ashe, Area Sales Manager for Alberta and N.W.T. CANCOM Satellite Network Services.
(Bottom) Delegates enjoy the teleconference.

Satellites and Scrambling

Teleconference

Following Mr. Polanski's address, delegates were treated to a live teleconference between Athabasca and Ottawa. John Feltmate, Techno-economic Analyst with the Canadian Radio-Television and Telecommunications Commission (CRTC), appeared on a giant screen and, after being introduced and greeted by Councillor Vince Rice, spoke to delegates. His talk was followed by a lively interchange among himself, Ed Polanski and Bill Ashe, Area Sales Manager for Alberta and N.W.T., CANCOM Satellite Network Services of Edmonton.

Mr. Rice, Mr. Polanski, and Mr. Ashe spoke into ordinary microphones to communicate with Ottawa but the system used to deliver the conference was satellite broadcast and audio-return. The NADC is indebted to AGT for this sophisticated addition to the Conference program. Delegates all saw the big dish-on-a-truck outside the hall and marvelled at what it could do. Mr. Feltmate spoke to delegates from a self-operated teleconference room which he showed.

The interchange with Mr. Feltmate made a number of important points, among them:

- Entertainment tv has largely matured so the future will probably bring more specialty services aimed at specific slices of the market similar to the way that magazines have gone.
- These specialty services, however, will only develop if they are profitable.
- The North may meet with difficulty in enhancing a diversity of tv signals — particularly where existing services are barely viable.
- The CRTC will likely take a look at suggestions for improved provincial and federal assistance regarding viewing choice.
- Although scrambling of signals appears to be harmful to public choice, there exists a scrambling policy among independent companies.
- There is some indication that a universal scrambling system may be developed.
- According to the Act, domestic transmission is for the use of Canadians alone. This applies to transmission and not to cable.
- Education falls under provincial mandate so if the province declares that industry and commerce (fishing, forestry, etc.) tv is educational, the CRTC would accept that declaration.

Distance Education

This session took the form of a panel presentation. It was moderated by Gene Dextrase, of the NADC. Panelists were: Terry Morrison, President, Athabasca University; Peter Senchuk, President, ACCESS Alberta; Des Berghofer, Assistant Deputy Minister, Alberta Advanced Education.

Terry Morrison

Terry Morrison declared that certain myths about the North must be dispelled. The first of these is that Canada's economic base is in the large southern cities. Not so, said Dr. Morrison. What happens in the North is vital to all Albertans and Canadians because although people may be in the cities, the resources are in the North.

Myth two would have us believe the North is a vast, inhospitable, barren wilderness. This false image must be turned around (perhaps by Tourism) because image is important.

The third myth is that the North is isolated. "From what?" Dr. Morrison asked. "From congestion? From pollution? From the rat race?" He pointed out that there are more satellite dishes per capita in the North than in the south. Northerners have greater access to information. He said that in many ways geography is becoming less important.

The fourth myth says the North is a cultural wasteland, but Northerners have access to all the products available in West Edmonton Mall. There is, as well, a high level of participation among Northerners and so, in the North, you find more people participating in sports, theatre, cultural groups, etc., than in most southern cities.

A fifth myth suggests that the North is populated by people who wish they were somewhere else, but the truth is — most Northerners live here by choice.

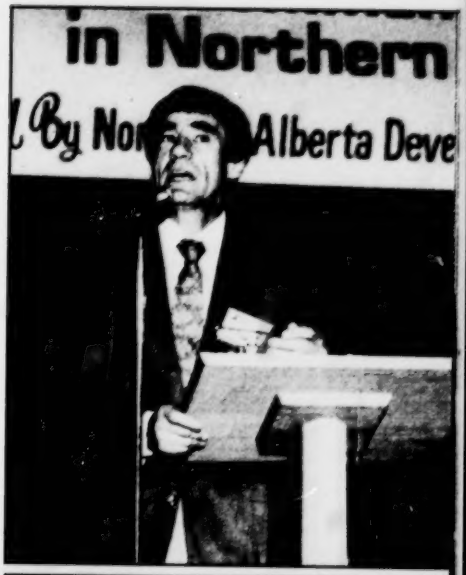
"No," Dr. Morrison said, "The North, rather than being isolated is interconnected; rather than a cultural wasteland, it is vibrant and new; rather than a last resort, it is a land that was chosen."

Although education has made many advances in the last 20 years and the basic education infrastructure is already in place, a northern learning network — designed in the North for the North — should be created. This would be a cost-effective way to provide northern education and would be achieved by linking existing education services via computers and teleconferencing.

He pointed out that the North still has several education needs:

- For education professionals
- For sustained continuing education
- For management education
- For industrial training
- For improved opportunities for Native people
- For decreased drop-out rates for Native people
- For ongoing agricultural education
- For educational opportunities in remote areas
- For telecommunications connections to service remote communities educationally
- For entrepreneurial education
- For tourism education

Dr. Morrison, in noting such a northern learning network would build upon resources and technology already available, told



Photos:
(Top) Gene Dextrase, the Northern Alberta Development Council.
(Middle) Terry Morrison, President, Athabasca University.
(Bottom) Plenary Session 3.

Peter Senchuk, President, ACCESS Alberta.

delegates that Alaska has this kind of network. He said he is certain that northerners will work together to fill the North's education needs.

Peter Senchuk

Peter Senchuk, President and Chief Executive Officer of the ACCESS Network, told delegates that balancing regional growth in Alberta is a challenge in logistics. "Sheer size and dispersed population centres not only contribute much to Alberta's scope and diversity, but also act as barriers to ensuring equality of opportunity — both in economic terms and in educational, cultural and social terms," he said and added that telecommunications' role, in fostering equality, is its ability to "collapse" distance.

Mr. Senchuk, in commenting on those study findings that impact ACCESS noted:

- The success of the ACCESS Network has largely been due to responsiveness to the user.
- To be responsive, ACCESS has both identified needs and developed the research resources to do so.
- ACCESS would be glad to participate in further study and to explore ways to enhance its role in delivering educational communications to the North.
- ACCESS has worked closely with educators in addressing needs in an interesting and entertaining fashion.

He noted that ACCESS is the trade name of the Alberta Educational Communication Corporation. Dedicated to providing a wide range of multi-media services, it offers both formal and informal programming with both large and small target audiences. The Network's major functions are the development, production, acquisition and distribution of tv, radio, print and educational technology, including computer software — all these in order to "promote and assist in the development of lifelong learning for Albertans."

Mr. Senchuk said that already ACCESS is focusing on new technologies which include video-discs and fibre optics. Such technologies will have an important impact on future educational telecommunications. Alberta is not alone in this field and, in fact, since the late '70s, Ontario, Quebec, B.C. and Alberta have had their own systems, and all belong to the Association for Tele-Education in Canada (ATEC). ATEC's purpose is to work toward improved telecommunications for Canadians. Alberta is able to both learn from and contribute to ATEC's members. For example, TVOntario, operating since 1970, reaches 95 per cent of that province, broadcasts 16-18 hours a day and has ratings comparable to PBS.

"As part of its growing emphasis on distance education — and with the help of its new satellite-based services — ACCESS has expanded its delivery of distance learning programs for Athabasca University to include several other institutions," Mr. Senchuk told delegates. He said this province has some 824,000 households, 85 per cent of which can subscribe to cable. Of these, 520,000 households receive ACCESS.

This enhanced availability has largely been due to the Network's move to satellite based delivery in January, 1985. ACCESS now offers 13½ hours daily, seven-days-a-week via ANIK C-3 satellite to cable companies as well as to institutional and residential

TVROs throughout the province. Satellite makes ACCESS available to every cable system and community re-broadcast service in Alberta. To assist communities unserved by cable, ACCESS has, since 1984, offered them grants toward the purchase of satellite receiving equipment. Mr. Senchuk noted that more than half the grants have been for northern communities.

ACCESS reception is important to remote communities because the Network provides a comprehensive schedule of school programs, university and college courses and general interest "enrichment" programs. "Reflecting the dramatic increase in the use of computers, ACCESS has, for three years, duplicated and distributed educational computer software and has collaborated with the Universities of Alberta and Lethbridge to produce computer distance learning."

An interesting new technology is Subsidiary Communication Multiplex Operation (SCMO) which permits narrow-casting as opposed to broadcasting. SCMO can meet the needs of small groups, for instance, "books" for the blind.

ACCESS also, upon request, provides educators with copies or "dubs" of audio and video programming as well as with printed support materials.

Mr. Senchuk, referring to the NADC study, noted that television services were identified as most in need of improvement. He suggested further examination of the findings with respect to distance education. One way to do this is through public participation in special projects in the North. However, he noted, in practical terms, ACCESS's ability to respond to increased coverage demand, to enhanced A-V conferencing accessibility, and to wider programming scope is resource-dependent. He said joint NADC/local community/ACCESS efforts are required.

"ACCESS Network is prepared to assist in addressing television service concerns expressed by northern Alberta residents, and is very interested in reviewing opportunities to participate in future projects which promise to improve its opportunities in areas of education, culture and information services," Mr. Senchuk concluded.

Des Berghofer

Des Berghofer, Assistant Deputy Minister, Advanced Education, was the third panelist at this session. He said, "Distance education is any arrangement for educating where there is distance between the learners and the source of knowledge." He told delegates that the idea of distance education has been around for a long time, particularly in Australia, where "School of the Air" for Outback children has operated for decades. Correspondence schools, here, have been a means of providing distance education, but now there is Athabasca University.

There is also an increasing need for access to education for as many people as possible, as conveniently as possible — particularly in the North. To meet this challenge, newer technologies are being looked at by Advanced Education.

One older technology, used effectively in teleconferencing, is the telephone but there is also some experimentation with sending graphics and pictures down the telephone wire along with the voice.

Des Berghofer, Assistant Deputy Minister, Alberta Advanced Education.

Delegates show rapt attention.

Already the North is sprinkled with institutions like the Alberta Vocational Centres, Community Vocational Centres, Regional Colleges and Educational Consortia so that learning centres can be reached via distance techniques. To provide maximum access to education, co-operative arrangements among institutions and communities is a necessity.

Some questions still remain, he said: How do we find the money? How do we deal with overlap? How do we handle technology?

The panel also dealt with questions from the floor:

Q. What can we, as individuals, do to improve and promote educational programming for the remote North?

A. It's hard as individuals to make an impact, so people should organize as groups and communities to develop linkages to make their case known. A second thing is to put pressure on existing institutions. (Morrison)

A. Important as it was to receive your input at this Conference, don't stop there. Write. Call. Keep us concerned. Do this on an individual basis. Whatever you are thinking — we must know. How can we be better? Let us know. (Senchuk)

A. Don't let your imagination let you down. We're moving into a fantastic communications era. We lack the ability to imagine how to use the technology. Never think a thing can't be done, because it probably can — but be reasonable regarding cost. (Berghofer)

Telephone

The fourth plenary session, held on Day 2, was moderated by Mary Bennett, a member of the Northern Alberta Development Council. She introduced H.M. Neldner, President, Alberta Government Telephones.

H.M. Neldner

Mr. Neldner stated that he would deal specifically, in his talk, with the four areas of concern identified in the W.J. Page & Associates report. He reminded delegates that these were:

- Lower long distance calling charges
- Extended flat-rate calling (EFRC)
- increased individual line service in rural areas
- More access to 911 emergency/ essential services

Today, Alberta's telecommunications system ranks among the most modern in the world — from digital switchings, to fibre optics, to satellite communications. AGT has one of the largest, most advanced mobile communications networks in the world. Rates are among the lowest in North America. Telephone service — available to 98 per cent of the population — stands at 79 phones per-100-people compared to 70 per-100 for Canada as a whole, 49 per-100 for Germany, and fewer than one for India.

Even so, there are gaps in telephone services in the North. There are areas with poor or non-existent mobile phone reception. There are other areas where no phone call can be made without a long distance charge. There are businesses that would tap into databanks or use teleconferencing if the services were in place at a lower cost. There are northerners who still cannot access Athabasca University.

Mr. Neldner noted that AGT is aware of the concerns of northerners and mentioned that more than 36 briefs have been submitted to Council since 1980. "Thirty-six submissions is a considerable number," he said, adding that every single concern, however different it might be, is a viable concern. "What I bring you today is a message that AGT no longer wants to be part of the problem. We want to offer solutions."

He said that northerners' concerns are legitimate and, "It is our challenge, as a corporation, to balance the socio-economic needs of our customers with the hard reality of running a business which must be self-supporting."

Mr. Neldner said it has not been proven that competition in long distance service will reduce costs or that it will have no effect on the principle of universal public telephone service.

He noted that there exists a perception that long distance rates cost more in the North and that suggestions have been made to reduce northern rates via higher subsidies from the rest of Alberta. "I can understand that many northern communities are isolated from their market centre and are required to pay long distance rates to communicate with these communities," he said. "But," he added, "many similar communities across Canada have far more limited telephone availability and costs are higher." He made it clear that the smaller

Photos:
(Top) H.M. Neldner, President, Alberta Government Telephones.
(Middle) Conference proceedings captured on television.
(Bottom) Plenary Session 4.

the community, the more it costs to provide even basic phone service. Mr. Neldner assured delegates that AGT will continue to try to find ways to lower long distance rates.

He mentioned a trial alternative tested in selected northern communities, for example, Bear Canyon, Wanham and Valleyview. Long distance rates were discounted as much as 57 per cent between adjacent communities regardless of distance. Still another plan tried up to a 33 per cent discount between communities 50 miles apart or less. Mr. Neldner did not say whether or not there are plans to extend these trials.

The extended flat-rate calling program (EFRC) is not a trial program and, since its introduction in 1973, has thrice had its distance increased. The program now allows a customer to call between communities up to 34 miles apart at a flat rate. Although such a program costs AGT extensively for material, equipment and labor, it does provide a "sub-network" of 256 EFRC routes.

Since April of this year, plans have been afloat to add another 105 EFRC routes to once more extend the distance — this time to 40 miles. He said route selection is based on research. The annual cost of EFRC expansion is a whopping $18.5 million and that does not count the resulting long distance revenue losses. Mr. Neldner indicated that EFRC expansion will continue.

He reminded delegates that Premier Don Getty has already announced that all Alberta telephone subscribers are targeted for individual line service within the next five years. This project will consist of equipment and network upgrading in 300 telephone exchanges across Alberta and will cost almost $500 million. Mr. Neldner said he expects about 20 per cent of exchanges will be connected every year. When the project is completed, Alberta will have the best telephone service in the world.

He also indicated that Centron services will be expanded. These are family business services that provide multi-line business telephone equipment similar to key systems and private branch exchanges. He mentioned other innovative systems that are planned, among them selective call forwarding, call screening and calling line identification display.

One innovation, sure to be popular in the North, is "flexible boundaries" customized to individual need, to allow basic phone service to adjoining exchange areas without an attached high price tag.

He concluded by saying that AGT will strengthen and focus its efforts more clearly to continue to develop new and improved technology for increased service and lower costs.

Revitalization and the Role of Telecommunications

Jack Hillier, Vice-President Western Canada, Northern Telecom Canada Limited, was the featured speaker on October 30 at the luncheon. Introduced by Fred Gingerich, NADC Councillor, Mr. Hillier's topic was "Revitalization and the Role of Telecommunications."

Jack Hillier

He noted that telephones have come a long way since their invention: "Small businesses are using sophisticated telephone systems to communicate more efficiently. For them, the telephone set has become a data terminal, a message centre, and a productivity tool." Farmers also see the telephone as a vital link. For governments (at all levels), the telephone network is important for delivering programs and services to rural and outlying communities."

And, Mr. Hillier stressed, for the rural resident, "The constantly improving telephone network represents the all-important link between friends, neighbors and services."

He went on to say that today's telecommunications systems are changing the way northern Albertans live and do business. Referring to Ed Polanski's address on Day 1, he agreed that today's world is in a major industrial revolution. This revolution — a global one — is driven by microelectronics. One result of such a global revolution is that companies like Northern Telecom, are able to compete in both domestic and foreign markets. "Our competitors are no longer just down the road or across town or even across the border. They are in Japan, Korea, Taiwan, Singapore and Europe."

The challenge faced by northerners, in Mr. Hillier's view, is to understand the new technology and find ways to use it for the interests of the North. The new ways, the new technologies, are part of a larger change. "What we must recognize is that we are not in a recovery and we are not in a recession. We are changing economies." Changes like that cannot be resisted.

Some of the changes — advances — in telecommunications involve digital switching, fibre optics and microwave technology. Alberta telecommunications networks have pioneered in these fields and the North has been one reason that this occurred. Remoteness, spread-out population and the necessity to compete beyond Alberta's borders have contributed to the building of a strong network.

Telecom Canada is a consortium of the major telecommunications companies in Canada. The companies are now working on installation of a national fibre optics network. Such a route will enable telecommunications companies to send voices and data across the land through hair-thin strands of glass. The method will be accurate, speedy and efficient — as many as 8,000 messages at a time can be sent by this method. Using single-mode fibre optics cable, the network will send 565 million bits of information per second.

Photos:
(Top) Jack Hillier, Vice-President Western Canada, Northern Telecom Canada Limited.
(Middle) Fred Gingerich, the Northern Alberta Development Council.
(Bottom) Luncheon Address.

Mr. Hillier said Northern Telecom will supply much of the cable and electronic equipment needed for the network. The company has opened five new factories and created in excess of 2,000 jobs on the prairies since 1979. Nationally, Northern Telecom has 25 plants with more than 21,000 employees and is the world's third largest telecommunications manufacturer.

"High-tech today is global in scope and is a critical factor in the ability of any country or region to compete and to marshal innovative applications of technology. It's critical to oil and gas, to agriculture, to telecommunications, to manufacturing. And it's critical to Canada, Alberta and the North."

Because this is so, and because technological innovation impacts the entire economy, the activity of all economic components must change behavior and movement and pattern. That is, products, markets, management, production and universities must all change. In such a shifting environment, the essential national resource becomes the capacity for innovation. "That's the ability to continually discover, refine and produce frontier technologies, and to *apply* those technologies."

Northern Telecom, by following the above pattern, revolutionized the industry by introducing digitalization. With digital technology, telephone systems provide improved services — things like call forwarding, call waiting, three-way calling, clearer and more accurate signals.

Today, Northern Telecom's digital switching technology (DMS) is used in more than 90 countries. In Alberta, more than 25,000 DMS service lines operate. Alberta Government Telephones, which is a subscriber to the Northern Telecom consortium, has a broad program in place to bring digital services to the province. The Alberta Government, as well, has announced a multi-million dollar program to upgrade party line service to individual line service. The individual line service will take only five years to complete because the sophisticated switching equipment and network are already largely in place.

Although about 10 per cent of Alberta's labor force already works in the telecommunications and information sectors, growth in those fields depends on full participation from government, academia and the private sector. The new Department of Technology, Research and Telecommunications is a concrete example of government's commitment. It is important that the post-secondary education system turns out graduates skilled in high-tech and able to manage in a constantly changing society.

Mr. Hillier cited the Alberta Telecommunications Research Centre (ATRC) as a prime example of the co-operation and vision he was discussing. The Centre will offer engineering students the opportunity to work hand-in-hand with leaders in the telecommunications sector. ATRC, a new research project, has the Alberta Government, the Alberta universities and Northern Telecom as charter members and will soon be highly involved in its field. "I suggest that although the ATRC is still in its formative stage, you might look to this new resource as a research partner for the unique problems you face in the North," Mr. Hillier told delegates. He said that such an alliance would form the vital link in understanding new technology and the ways it might help fill the North's needs.

Mr. Hillier concluded by saying: "Alberta has the opportunity to be at the forefront of the dramatic changes taking place in today's move to the Information Age. But the future is not for the faint-of-heart. There are challenges and risks ahead although the economic and social results will be worth the effort.

In the afternoon of Day 2, delegates broke into three groups, each with a separate broad topic to discuss and each with a panel of experts. The sessions ran concurrently and were repeated once with a different group of delegates participating.

Television Issues and Delivery Approaches

Moderated by John Drobot, MLA and Council Member, the panel for Group 1 was composed of Bud Bate, District Manager, Federal Department of Communications, Edmonton; Dick Dutka, Regional Engineer, CBC, Edmonton; Gary Christopherson, President, Glomma Cablevision Ltd., Grimshaw; Del Harbourne, Mayor, Manning; Clint Buehler, Director, Aboriginal Multi-Media Society of Alberta, Edmonton.

Bud Bate

Bud Bate noted that Canada's geography and history have forced her into a pioneer role in communications — a still-continuing role. Even more than discovering new ways to communicate, Canada must ensure that new technologies serve her social, economic and cultural needs. The Federal Department of Communications (DOC) is a key player in this regard.

Broadcasting, in the past, has been vital in fostering Canada's identity as a nation and will be just as important in the future. Mr. Bate noted that such new technologies as satellites and pay-tv are the media shaping today's ideas and values.

DOC is responsible for ensuring that Canadians receive the best foreign offerings while, at the same time, Canadian productions are expanded and improved. Six million Canadians live in rural and remote areas and these people need and deserve wider broadcasting than they currently receive. DOC is at work on this.

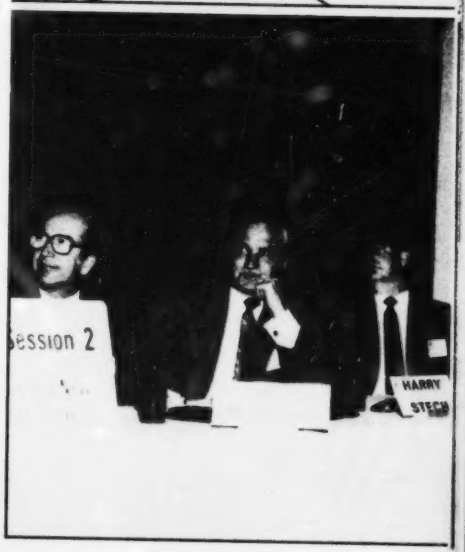
Satellite systems, pay-tv, CBC and provincial educational services, all aid the remote dweller.

With the wide range of available transmitters, a user must be careful to select a system that will adequately cover the area to be serviced. The area covered varies according to the transmitter's power, the channel (frequency) selected, the design and height of the antenna, and the terrain. Cable is the best alternative where homes are close together. A broadcast system is probably more appropriate where houses are spread over a wide area.

DOC, through its district offices, assists entrepreneurs, communities and native broadcast organizations to establish community broadcast or cable systems. This is done through provision of information regarding licencing and technical requirements.

Mr. Bate, looking to the future, suggested many technological changes:

- Audio and video subcarriers to transmit videotext and audiotext
- Satellites for direct-to-the-home broadcasting
- Expanded fibre optics technology
- High definition tv
- Improved display technology



Photos:
(Top) Concurrent Session 1.
(Middle) Bud Bate, District Manager, Federal Department of Communications.
(Bottom) Concurrent Session 2.

Gary Christopherson, President, Glomma Cablevision Ltd.

- Switch-networks to do away with channel and schedule rigidity

He ended with the observation that understanding the implications of the new technology is different from being governed by it. "It is more important than ever," he said, "that Canadians remain Canadian."

Dick Dutka

Mr. Dutka told delegates that, while satellite delivery of tv is not new, there are many attractive ways of using it. As many as 100 separate radio channels could be put on one transponder each linked from separate locations, for example. Or, radio and tv programs could be transmitted in digital form with minimal degradation. Wider screens could be used at home. Pictures could have different audio channels — perhaps each one in a different language. Video cassette recorders will offer the same quality we now know in compact audio discs. Fibre optics will allow such services as home shopping, banking and library use.

Technology itself, however, is not a complete answer. "To benefit from technology, we must have a clear idea of what we want it to provide. What programs and services do we want? Where will they come from? What do they offer? How will they change our lives?"

Since the new technology will be costly, choices will have to be made. Just because the use of complex technology is the next step in communications doesn't mean elimination of personal and community involvement. And, cost-savings can be made through co-ordinated efforts of the various agencies and users. Other savings will occur if the hardware choices made, allow for future growth.

In 1971, the CBC began to extend radio and tv services to communities with populations of 500 or more. Called the Accellerated Coverage Plan (ACP), it took the combined resources of nearly every equipment manufacturer in the world almost seven years just to make the needed equipment and took more than 10 years of intense work by CBC staff and by private consultants and contractors. At the end of the 10 years (1981), CBC had 114 transmitters in 70 different locations in Canada.

There is still much to be done, particularly in northern Alberta, and it will be done as soon as funding is available. Pending that, innovative ways to use the existing equipment must be found. An example is the current extension of native programming where the audio channel of the tv system is offered for radio every weekday for about two hours. This time allotment will soon be increased.

"Sometimes it is tempting to say we can't get there from here. That's where conferences like this are invaluable in helping us focus on what we want and how to move along the zig-zag path to get there," Mr. Dutka concluded.

Gary Christopherson

Mr. Christopherson said he agrees with the conclusions of the W.J. Page study — that most

northern broadcasting problems can be solved through existing technology. He believes, however, that regulatory authorities are not using the technology to full advantage. He recommended five ways to improve and expand tv services at a projected cost of about $60 per household per year:

- Regulatory authorities must take full advantage of satellite technology by requiring satellite distributors to sell at the same rate, regardless of the town's location.
- The required minimum number (four) of CANCOM channels a northern town must purchase should be removed.
- Ottawa should call for applications to provide additional supplementary and competitive services to the CANCOM network.
- Ottawa must change the eight per cent excise tax to a flat tax earning equivalent revenue.
- Ottawa must consult with northern towns and should end protection of non-performing southern firms which hold licences in the North.

Mr. Christopherson did not arrive at these recommended changes through a flight of fancy. He had concrete data to support them. For example, he pointed out that contrary to other service delivery programs like goods and supplies, it costs no more to deliver a satellite signal to Berwyn than it does to New York, yet CANCOM discriminates price-wise. Also, northerners pay twice as much excise tax for rebroadcasting as southerners do. The Klingle Commission, in fact, recommended forcefully that a flat tax be levied to all Canadians who receive supplementary tv. Even so, Ottawa's reaction has been to raise the tax — unequally — so that northerners now pay about $10 per household more a year than southerners and still get a poorer selection of Canadian programming.

Mr. Christopherson said: "Ottawa seems responsive only to the broadcasting concerns of the large populations in the south." He said that despite the recommendations of the Klingle Commission nothing is changed and Ottawa does not listen to the affected communities either, even though these communities have made their needs and wants known in forceful presentations through the proper channels.

Del Harbourne

Del Harbourne related a "horror" story to delegates, outlining the barriers encountered by the town of Manning in its efforts to increase its television access.

Step one was to approach CTV, who, after initially asking $120,000 for a study to assess the situation, backed out when an independent station involved itself.

Then, in 1978, Manning was contacted by Crowder Communications in B.C., which offered to bring satellite tv to the community. It cost the town $60,000 for the necessary equipment to beam in two channels but this made live telecasting available and appeared to be money well-spent. The equipment, called a Transportable Satellite TV Receive-Only Earth Station, is known by residents as the "dish."

A short time after installation of the dish, DOC inspected it and

found it satisfactory but the CRTC sent a letter informing Manning that it did not authorize reception and distribution of signals from a foreign satellite.

Manning wrote to Chicago and Atlanta, whose signals they received, offering to pay for reception but were told this would be illegal. The town began to receive program schedules from these two American channels and continued to view them.

The next move was to purchase another Earth Station in order to receive signals from the Canadian satellite, ANIK B. This beamed in another three channels.

The CRTC, it was then rumored, might possibly licence "underserved" areas and Manning attempted to discover what an underserved area might be so that they could fit the category. As well, the town joined the Western Canada Satellite Association.

Ms Harbourne met with representatives of DOC and CRTC and understood that if Manning purchased CANCOM, no official action would take place regarding the illegal reception of Atlanta and Chicago. The town applied for CANCOM. There would, for the first time, be a cost attached for residents — four dollars per-household-per-month was asked by CANCOM and the town decided to levy a $10 monthly charge (on an honor system). Everything was turned over to the Sport Centre which received a licence to operate a broadcast system.

The next move was to build a tower for $9,500 to extend signalling farther into the Improvement District. The town briefly toyed with the idea of scrambling, but decided against it. Then, following a federal government task force, American stations (including Chicago and Atlanta) were added to the CRTC's list of licenceable stations but these, like all U.S. stations, must be scrambled.

In April, 1986, Ms Harbourne was summoned to a hearing in Saskatoon to show why Manning's licence should be renewed in the absence of scrambling.

Ms Harbourne said: "My argument was that the Task Force recommendations were still being considered by the CRTC, Bill C-20 (to allow ministerial direction to CRTC) was not passed, the CRTC was reviewing rural and remote broadcasting policy, and the scrambling would entail a tax burden to residents." She added that Manning paid for signals (CTV) available free elsewhere in Canada.

She said that although the CRTC members she met in Saskatoon were anxious to help, they were badly misinformed about scrambling costs. They stated this equipment would cost about $10,000 whereas the estimate received by Manning is $59,000.

The latest development is that Chicago and Atlanta are now about to scramble their signals and have told Ms Harbourne that, because of U.S. copyright law, they cannot supply descramblers outside the U.S. Ms Harbourne has made the necessary next overtures to the U.S. stations' boards and to CRTC.

"The future growth and wellbeing of any community lies in its ability to attract new people, business and ideas. The development of a strong base of community-related services, such as television, will go a long way in ensuring this for the town," Ms Harbourne said.

Clint Buehler

Mr. Buehler noted that many northern remote communities underserved by tv and radio have large native representation. Consequently, native people are tremendously affected by whatever occurs in this industry and are very interested as well. He said while some progress has been made, there are still many concerns to be addressed.

Modern native communications had its start in 1968 with a radio program, a newsletter and a paper. Programs were beamed from Edmonton and returned through an interactive process. Then in the early 70s, the Alberta Native Communications Society instituted AMMSA with the Secretary of State and the province. In 1984, Northern Native Broadcasting transmitted programming with a mandate to serve special communications needs of the hard-to-fill native communities.

Cost continues to be a major problem for native broadcasters since the system, as set up now, denies them the right to generate revenue. Ten of 13 programs on natives and the North have been completed in a co-producing endeavor with the CBC.

What is needed, so that natives can protect and promote their culture, is people with the skills to carry out communications delivery — technicians, admen, equipment servicers, and so on. Obviously, training programs and the resources to hire these people are needed.

"We see a need to provide the kind of awareness that will allow us to work co-operatively to help natives achieve their objectives, so there is a real need to share both technology and insight," Mr. Buehler told the group.

Some questions were dealt with:

Q. Some isolated communities have no tv. What can be done?

A. More community rebroadcasting systems are required. Communities will have to work together to achieve this.

Q. The cost is prohibitive.

A. The cost of CANCOM must be averaged out for all Canadians. Petitions, meetings, lobbying must all take place.

Existing and New Telephone Services

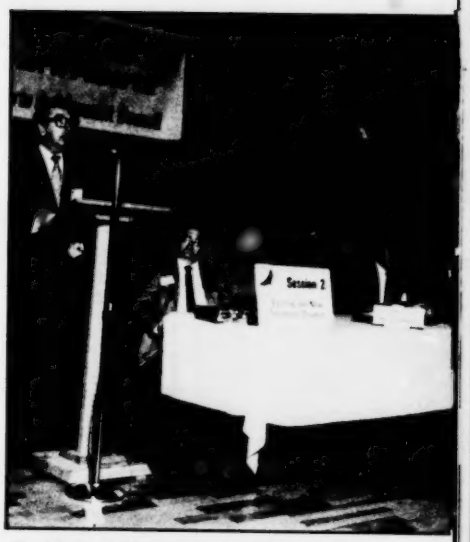
Moderator for this session was Bernie Hornby of the NADC. Panel members were: J.D. McDonald, Vice-President of Corporate Development and Regulatory Affairs, Alberta Government Telephones, Edmonton; Harry Stech, Assistant Vice-President, Business Sales and Service, Alberta Government Telephones, Calgary; Mort Downey, Vice-President, NovAtel Communications Ltd., Calgary.

J.D. McDonald

Jim McDonald told delegates that individual line service will cost $500 million — a huge commitment by the Alberta government and AGT to improve service. He said that 20 per cent of routes will be completed per year over five years and promised that the North will not be the last area improved.

The cost to the subscriber will be $4 per month over 20 years or $490 payable at once.

In speaking of extended flat rate calling development (EFRC), Mr. McDonald agreed that rural service has not equalled that in urban centres but noted that AGT is committed to balancing this.



Jim McDonald, Vice-President Corporate Development, AGT.

Harry Stech, Assistant Vice-President, Business Sales and Services, AGT.

"All Albertans will receive the same quality of service and subscribers will not know what technology they have — fibre optics, copper, digital, etc.," Mr. McDonald said.

He noted that there are still several northern communities without access to their business centres and told delegates: "Theoretically we should be able to choose where a phone is connected to the system so that people can choose their own EFRC connector. AGT probably needs to do a better job in the North about telling people of their calling options." He added that users — communities, citizens, and so on — should petition AGT and their MLAs to initiate changes.

Harry Stech

Harry Stech outlined a few of the advances that will be made in telecommunications:

- Improvement will be made in voice communication.
- Cellular mobile service, becoming more significant, will provide mobile telephones that act the way home telephones act.
- New individual line service will increase micro-processor use of telephone lines.
- Data communication services will expand.
- Agriculture will be able to obtain software programs that allows hooking into database systems.

Mr. Stech stressed the fact that AGT has no intention of competing with small enterprise but, rather, has the capability and the desire to work with private industry.

He reminded delegates that today's world is an information world and that modern technology has enhanced our lives in many ways.

Mort Downey

Mort Downey said he realized that, too often, manufacturing giants get so wrapped-up in "State-of-the-Art-Technology" that the needs of the consumer are overlooked. NovAtel, he said, was born because of a commitment by AGT and Nova, an Alberta Corporation, to look after the consumer.

This led to the first cellular mobile system installed in North America, and car telephone service is now available to most Albertans. Yet, he noted, most respondents to the W.J. Page study seemed not to know of all that is available in this area. Benefits such as the option to use a computer over a car telephone; or to be able to voice scramble; or to have a hands-free operation system; or call-forwarding, call-waiting and conferencing are not widely known.

He gave examples of situations where mobile phones can solve problems:

- A coach or parent, stranded in a blizzard with a vehicle full of children
- A farmer, urgently in need of a part while in the field
- A fire chief, in need of assistance from a fire department in the next town

"Communications in your home, your office, your car are all taken for granted but we know that users of our equipment want the option to take the device with them. Our solution is to initiate products that will lead to the 'unwired world.' Eliminating wire or fibre will reduce costs," he said.

The user, Mr. Downey said, has four wants or needs:

- Utility (usefulness)
- Acquireability
- Long-term benefits
- Serviceability

Bringing solutions to these wants and needs is the plan that guides the evolution of NovAtel's product technology.

Some questions emerged from this session:

Q. How many lines will be converted to individual line service?

A. Roughly 100,000.

Q. Are there plans to have Data Packs available to rural subscribers?

A. That depends on volume. We have the ways to accomplish this — but at a cost.

Q. I'm talking about individual users.

A. It's most accessible.

Q. Not for distance education, for universities.

A. If there's a demand, a need, we look at it.

Q. How soon before the mobile phone costs the same, or nearly the same, as a house phone?

A. As soon as we get the volume of subscribers to help spread the cost.

Q. Since there are areas in the North where there is no EFRC service to the business centre, can't you redefine boundaries to make the proper criteria apply?

A. To change the boundaries is a difficult nut to crack. Right now, there is no rhyme or reason to the exchange boundaries. But we're stuck with the structure in place today. Your suggestion is a good one and theoretically we should be able to do it via a software change.

Q. Is that 40 miles cast in stone? Can't you extend it to the nearest business centre?

A. No. We're regulated. Once we apply, we have to abide by what we applied for.

Q. Is the option to amalgamate exchanges to be presented to communities — so they can decide what exchange they want to be on?

A. Petition AGT. Petition MLAs. Get communities and associations together.

Several delegates registered their concern that the Page study did not reach mobile phone users and, thus, did not identify needs and problems in this area.

Northern Distance Education Programs

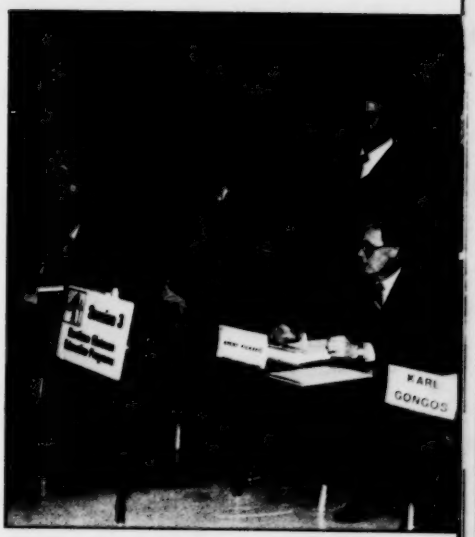
Panelists for this session were: Brent Pickard, Director, Program Planning and Development, Alberta Advanced Education, Edmonton; Ross Paul, Vice-President Academic, Athabasca University, Athabasca; Dan Vandermeulen, Vice-President, Alberta Vocational Centre, Grouard; Karl Gongos, President, Community Vocational Centres, Slave Lake. The session was moderated by Ted Sonntag of the NADC.

Brent Pickard

More than regulations and economics within delivery systems must be addressed by the CRTC, Brent Pickard said. It is necessary, also, to deal with regulations and economics within educational institutions.

Another priority is to organize and focus discussion on community needs. At this time, discussion is based community-by-community but a regional view is a must. There must also be a balance between what the learner requires and what it will cost to deliver these by way of a wide variety of delivery techniques.

Mr. Pickard listed the initiatives already put in place by Advanced Education:



- Community consortia — basically co-ordinated multi-institutions for face-to-face decentralized education delivery.
- STORK (Seeking Technology for Outreach of Knowledge) — a computer managed learning system available in some areas of the province. Fairview College and Alberta Vocational Centre, Edmonton, have been looking at this system.
- Teleconferencing Networks — RITE and Consortia FX.
- ODEA (Organizing for Distance Education Alternatives) — a framework for organizing and delivering distance education.

Mr. Pickard acknowledged that the structure of post-secondary institutions creates a strain on northerners and pointed out that funding restraints exist at this time. He said Advanced Education wants to enhance access to education programs for northerners and continues to work toward this end.

Ross Paul

Ross Paul told delegates that Athabasca University is the only university with offices south of its campus. Even though the University has entered into formal agreements with other institutions across the west and north, the rapidly increased demand for its services (20-30% increase annually) puts a strain on the delivery system. There is seen to be a need for more effective preregistration counselling.

Another dilemma exists because of the very nature of the University's being. Home study is more ideally designed for the urban student who chooses education by this mode. The rural student, by-and-large, does not have a choice, and is excluded from social interaction, face-to-face teacher-student processes, and the stimulation gained from being in class with other students. Teleconferencing — an Athabasca University compromise — helps in these areas and has a high completion record.

Distance education faces other issues:

- Better telephone rates are needed.
- Need exists to diversify the bases of funding.
- Access to RITE and to computer networks is required.
- A network of institutions serving the North should be set up.
- Northern content in courses must be addressed.
- Special northern needs require attention; perhaps a prototype program with a meeting of cultures should be designed.
- A native access program is a must.

"It's expensive to ignore the needs of the North; as well, it's expensive to meet the needs of the North, but universities have a fundamental role in meeting these needs," Mr. Pickard concluded.

Dan Vandermeulen

"Even though small institutions must work co-operatively to deliver distance education, with other groups and institutions, it doesn't mean they can't be leaders," Dan Vandermeulen said. He said AVC, Grouard, had been on the RITE system before anyone else discovered it; had got into teleconferencing and computer conferencing as early as 1982; had delivered addictions programming early and is now into French programming in the Falher area.

This is not to say there are no issues left to deal with. Rather,

there are still major concerns facing distance education:

- Educational needs for special telephone rates require recognition.
- Relocating a learner is costly and should be considered as part of a much-needed cost-benefit analysis of distance education.
- Because distance education breaks down boundaries and territories, liaison, co-ordination and soul-searching are needed to redefine the concept of "mandate."
- Both instructors and learners require retraining in accessing education and in thinking about education.

Mr. Vandermeulen sees a need for an electronic utility to serve clusters of individuals and communities. Such a utility should be "friendly" so as not to intimidate the learner or the institution. It would include such support systems as telephones, computer conferencing equipment and satellite technology. "High-tech is there," Mr. Vandermeulen said. "Co-operation is what is needed now."

Karl Gongos

It is necessary to better understand the needs of the North, Karl Gongos told delegates. It is equally important to know the best way to deliver what is needed.

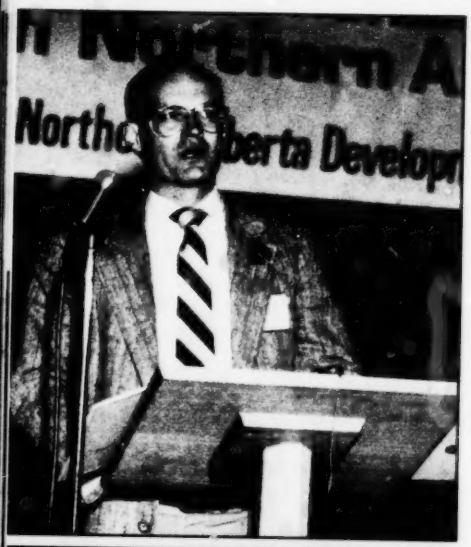
ODEA is intended to provide the framework to make legitimate distance education decisions. To do this wisely, several interviews were conducted and analyzed. From these, the following implications were seen:

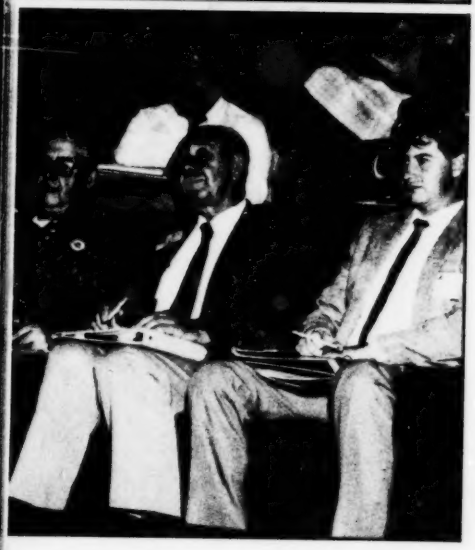
- There should be more systematic and planned avenues to identify needs.
- Learners should be more involved in needs identification.
- More study of learners' abilities and circumstances is required.
- Community factors should be considered when planning and offering distance education.
- Distance education requires "holistic" planning — planning that addresses all components.
- A provincial feedback system or clearing house is needed to look at needs, results, schedules, etc.
- Distance education requires marketing, both within institutions and with its users.

In conclusion, Mr. Gongos said he agrees with Mr. Vandermeulen regarding the need for a provincial education utility. He also sees a need for such telecommunications agents as Northern Telecom, AGT, NovAtel, etc., to become more involved at the planning level.

Questions dealt with included the following:

Q. How cost-effective is distance education?
A. This needs to be worked out from the two perspectives of learner and institution.
Q. The community sometimes doesn't have the physical services in place (phones, etc.) to handle programs.
A. We need a provincial focus on distance education.
Q. How are the modes of delivery fixed?
A. Finances, staffing, politics.
Q. Will there be programs for upgrading or for post-graduates?
A. Because of small numbers, demand is too low.
Q. Will there be distance education from NAIT and SAIT?
A. There already is. Distance education is proven. However, these two institutions still place their main focus on classrooms.
Q. Does that affect AVC, CVC, etc.?
A. It's a co-operative effort. There must be a local presence.





Steps Toward A Telecommunications Future in Northern Alberta

Bill Page

Bill Page addressed the assembly once again, this time with suggestions for telecommunications advances in northern Alberta. He was introduced by NADC councillor, Mary Bennett.

He said he had been impressed, throughout the Conference, with the individual awareness and commitment of delegates to the future of telecommunications in northern Alberta. The Conference then, in his view, served as an excellent first step toward a telecommunications future for the North.

He cautioned delegates to understand that the research report offers options only and that the need exists to get together to plan and to form procedures for action. He listed six discoveries that came out of the Conference:

1. There is no limit on imagination and what can be achieved in telecommunications.
2. Technology is still developing and it is important that we continue to focus our social, business and educational senses on the technology.
3. Northerners cannot afford to be shy in establishing a role for themselves in the future of this field.
4. A high level of commitment has been evident from delegates and speakers. As well, the North's needs have support from its suppliers.
5. A great deal of networking is evident among interested parties.
6. The future is positive. Many specific ideas have been forwarded. Dollar commitments have been made.

Mr. Page exhorted delegates to think about all they had seen and heard at the Conference — about the options, the demands, the support from the suppliers. "Now the work is up to you, to take a concrete look at what's been put before you and to establish the steps," he said, adding that it will be exciting to watch the North's progress in this area in the next few years.

Small Group Discussions and Reportback

Five small groups, organized on a random selection basis, met simultaneously to discuss questions about the future of telecommunications in Alberta's North. The questions dealt with were:

1. What should be the priority telecommunications issues addressed for Northern Alberta?
2. What are the most meaningful three steps to take in meeting the telecommunications needs of Northern Alberta?
3. What are the main issues to be resolved regarding present and future distance education services in Northern Alberta?
4. What are the main issues to be resolved regarding present and future telephone services in Northern Alberta?
5. What are the main issues to be resolved regarding present and future television services in Northern Alberta?
6. What are the main issues to be resolved regarding present and future radio services in Northern Alberta?

The following delegates reported on behalf of their groups:

Jeanne McIntyre	Group 1
Pat Larson	Group 2
Mike Cardinal	Group 3
Gordon Astle	Group 4
Gary Christopherson	Group 5

Common Perceptions:

- A unified strategy to develop a telecommunications infrastructure is needed.
- All Albertans should have quality access to telecommunications services.
- Costs of services should be evened out between the North and the south.
- All Albertans should have access to 911 telephone emergency numbers on a no-charge basis.
- EFRC and individual line service programs are excellent and should be implemented quickly.
- Long-distance rates should be reduced.
- There should be improved access to the RITE system.

Group Specific Ideas

Group 1

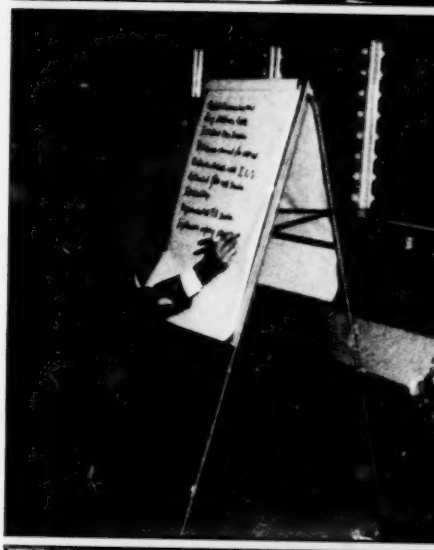
- Compile inventories to assess community needs in the area of telecommunications, particularly in underserved, remote communities.
- Conduct studies to assess regional and special interest group needs.
- Present results of these assessments to NADC so that the Council can advocate for implementation.

Group 2

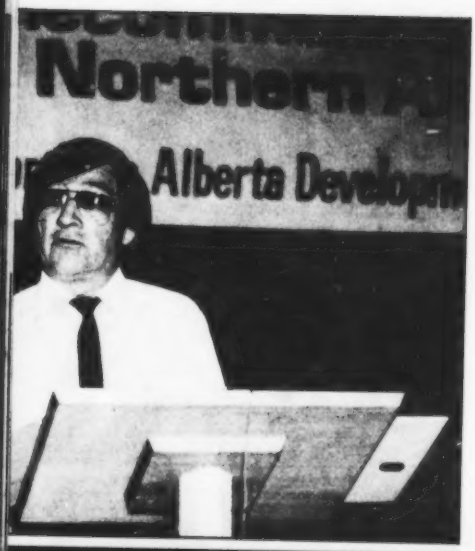
- Establish a standing committee to address northern telecommunications issues — information gathering and dissemination, service improvement, lobbying.
- Establish community broadcast systems to provide local information, education, improved overall coverage.
- Establish a committee to represent northern distance education needs.
- Lobby Alberta Advanced Education to encourage more institutions to include distance education in their mandates.
- Dedicate a tv channel for distance education.

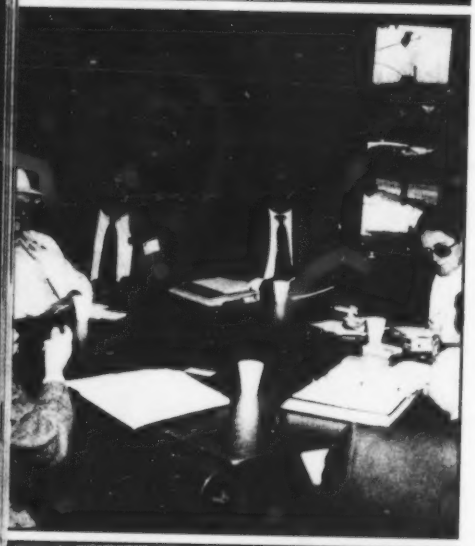
Group 3

- Provide information on the cost of installing EFRC.
- Educate residents of remote communities in efficient use of the telephone.
- Educate people on the availability and use of toll-free numbers.



Small groups met in session.





- Consider trading areas when establishing EFRC zones.

Group 4

- Provide grants for enhanced northern distance education.
- Reassess rate charges for education tv.
- Review and co-ordinate services used for education purposes.
- Place datapac in the middle of every EFRC zone.
- Make ACCESS Alberta available to all Albertans through subsidies of cable charges and special grants for rebroadcasting systems.
- Provide local tv broadcasting through community stations.
- Increase telecommunications capabilities in the North through use of fibre optics.

Group 5

- Assist remote communities more fully in their efforts to acquire full services.

The group had three suggestions directed specifically to the NADC:

- Assist communities to seek financial, technical and production help for community radio.
- Seek ways to provide training for community radio staff in production and programming.
- Seek ways to assist in the establishment of commercial radio in economically marginal and rural areas.

Closing Remarks

The Chairman of the Northern Alberta Development Council, Bob Elliott, provided closing remarks and summarized the Conference. He declared it a valuable forum where good ideas had been exchanged.

"I call this a 'Key-Word Summit'," Dr. Elliott said, "I heard words like 'challenge' and 'innovation' and 'imagination' and 'creativity' — all related to developing good telecommunications for the North."

He said that Hon. Les Young had set the stage for the successful Conference and that Bill Page had equipped delegates to listen and think.

Dr. Elliott reminded delegates of all the exciting things they had heard over the three days — from the promise that in five years, Albertans will have the best telephone system in the world, to the idea of a "learners' network" as a utility, to the notion that telecommunications is a means of "collapsing distance."

He said that, in his view, the fact that so many important communications people and companies had taken the time and made the effort to attend the Conference, was significant and showed their commitment to making the North a better-served area. He declared himself gratified by objectives (such as expanded individual line service and enhanced flat rate coverage) that had been made known by the provincial government and AGT. He also expressed satisfaction with the evident commitment of manufacturers and suppliers.

"So, where do we go from here?" Dr. Elliott asked. He informed delegates that the Northern Alberta Development Council will carefully review all of the Conference's input, will publish a report tabulating the proceedings and will make recommendations to government. "The minister responsible for northern development, Al "Boomer" Adair, is a northerner and *he* listens," Dr. Elliott said, adding that this system is a proven one. He listed many of the successes that have taken place over the years as direct results of NADC conferences, delegate input, and Council recommendations.

"We have northern approaches to northern problems and get government to listen. That's what we're here for. And it works because you delegates come, take your own time, and make it work."

Dr. Elliott closed the Conference with a reminder to delegates to pursue the ideas they had collected over the past three days and to work with their communities and organizations to help make the ideas concrete structures.

NADC Recommendations

Based on their findings in the research report and at the Conference "Telecommunications in Northern Alberta," the Northern Alberta Development Council recommends the following:

RECOMMENDATION 1

Universal delivery of Alberta ACCESS NETWORK should be encouraged as a goal for northern Alberta.

A number of northern communities lack the necessary infrastructure to receive ACCESS NETWORK. This places them at a disadvantage in terms of receiving educational television programs.

A need also exists to increase the distribution of ACCESS NETWORK through existing rebroadcast and cable facilities in northern communities.

RECOMMENDATION 2

Alberta Government Telephones (AGT) should institute on-going information activities with northern groups and citizens.

The participation of AGT personnel at the Conference was very well received by northern delegates. The NADC views AGT's personal exposure to northern issues and concerns as an important developmental approach. This style of approach should be continued as an integral part of program delivery.

RECOMMENDATION 3

Alberta Government Telephones (AGT) should proceed as soon as possible with the Rural Individual Line Service program.

It was voiced at the Conference that individual telephone line service is important to rural businesses and farms in the North. Northerners want to see that the program is brought on stream quickly and in a manner that does not disadvantage the more remote areas of the Province.

RECOMMENDATION 4

Special arrangements should be considered by Alberta Government Telephones (AGT) to allow the Extended Flat Rate Calling (EFRC) program to better serve northern regions.

In considering extensions to the EFRC limits, AGT should examine more closely established patterns in grouping those centres which share common economic and social trading patterns.

RECOMMENDATION 5

Alberta Government Telephones (AGT) should make efforts to restore local telephone services to users, particularly in remote and isolated communities, who previously defaulted on their telephone payments.

The NADC perceives telephone access to be a prerequisite need for continuing development in the North. In places where misunderstanding over the use of telephone exists, steps should be taken at the community level to educate people about the opportunities and responsibilities that accompany the use of the telephone.

RECOMMENDATION 6

Alberta Advanced Education should assume the lead role in co-ordinating the development of northern distance education.

Whereas Alberta Advanced Education is taking some worthwhile steps in the co-ordinating of distance education province-wide, the NADC feels that special effort is required to serve the dispersed population of the North. The Department's role in this area would involve conducting a needs assessment for northern distance education, plus the arranging of planning meetings between the involved parties.

ACCESS NETWORK, Athabasca University, University of Alberta, University of Calgary, NAIT, Grant McEwan College, Alberta Vocational Centres, local school authorities, Community Vocational Centres, and others such as Alberta Government Telephones should be involved in any continuing Alberta Advanced Education initiative in this area.

RECOMMENDATION 7

It is essential that agencies involved in the delivery of distance education continue the process of dialogue and planning which is now underway.

The resources and technology exist for distance education to take place, however, co-ordination of delivery is needed to make the system work more effectively. The best dollar-value of distance education accrues from the sharing of ideas and approaches between the involved educational institutions, educational programs and the suppliers of technology hardware.

RECOMMENDATION 8

Steps should continue to increase the provision of licensed Canadian television signals in northern Alberta.

A number of northern communities receive no television, only a single Canadian channel or only unlicensed American channels. To remedy these problems the provincial and federal governments will have to increase efforts with individual communities and the private suppliers of television to secure enhanced, licensed, Canadian television services in the North.

RECOMMENDATION 9

The Provincial Government should examine the provision of research assistance for the assessment of telecommunications needs in rural areas and smaller, northern communities.

The largest gap in telecommunications services exists in the remote communities. Advance planning from a community perspective would identify the most efficient way to develop and co-ordinate gap-filling services. This step would ensure that duplication does not occur between groups, particularly in the areas of television and distance education.

RECOMMENDATION 10

A non-profit community radio pilot project should be developed to assess the potential role of community radio in northern Alberta.

Remote communities in the North often have limited facilities for sharing local news. A pilot project would allow the communities to assess whether radio is an effective way to fill this informational gap, plus provide cultural and entertainment oriented programs.

RECOMMENDATION 11

A task force should be established to investigate the ways and means of increasing the distribution and choice of FM radio signals in the North.

While FM radio was identified as a top priority need for northerners, neither government nor the private sector have sufficient information on how to improve FM delivery. A task force involving government and private industry would play an important role in the highlighting of constraints and innovative approaches to FM radio distribution in northern Alberta.

RECOMMENDATION 12

The northern public requires more information on how to achieve low cost telephone access to government.

Many northerners would benefit from increased awareness of how to approach government through the use of RITE Centres, Zenith numbers and 1-800 numbers. More information of this kind provided by Alberta Public Works Supply and Services would enhance the use of government services in the North.

Photos (left):
(Top) Tasty repast and the ladies who prepared it.
(Middle) The mobile dish that made the teleconference possible.
(Bottom) Here's to telecommunications in northern Alberta!

Photos (right):
(Top) Time for a laugh-break.
(Bottom) Elder pronounces a traditional Cree table blessing.

Photos (left):
(Top) Three busy Council members.
(Middle) The latest technology as communicated to delegates by The Comedy Commission of Edmonton.
(Bottom) Let's put this into perspective.

Photos (right):
(Top) Delegates took notes in all sorts of modern ways.
(Middle) Rapt attention at a small group session.
(Bottom) Delegates found that much of the conference was a real learning experience.

Abel, Dr. Bob	Alphatel Systems Ltd.	Edmonton
Albert, Mr. Rolf	Public Affairs Bureau	Edmonton
Aleksiuk, Mr. Alec		Athabasca
Anderson, Mrs. Helena	Town of Grimshaw	Grimshaw
Anderson, Mr. Terry	Alberta Vocational Centre	Grouard
Applegate, Mr. Brent	Wandering River Dev. Assoc.	Wandering River
Archibald, Mr. Jerry	Northern Development Branch	Peace River
Ashe, Mr. William	Can. Satellite Communications	Edmonton
Astle, Mr. Gordon	Town of Beaverlodge	Beaverlodge
Auger, Mr. Glen	Caslan Metis Settlement Assoc.	Caslan
Barnard, Mr. John	Economic Dev. Commission	Grande Prairie
Bate, Mr. Bud	Federal Dept. of Communications	Grande Prairie
Bear, Mr. Louis	Northern Dev. Advisory Council	Sandy Bay, Saskatchewan
Beaver, Mr. Samson		Calling Lake
Belaire, Mrs. Phyllis	Village of Hythe	Hythe
Bell, Mr. Jay	FIGA	Edmonton
Beltrano, Ms Linda	Northern Development Branch	Peace River
Bennett, Mrs. Mary	Northern Alberta Dev. Council	Elk Point
Berghofer, Dr. Des	Alberta Advanced Education	Edmonton
Bjorgum, Mr. Lee	NWREDC	High Level
Bjornson, Mr. Peter	Town of High Level	High Level
Bleiken, Mr. Alan	Athabasca University	Athabasca
Blesse, Mr. Raymond	Kayas Cultural Centre	Fox Lake
Boulanger, Mr. Claude	Joussard Area Dev. Assoc.	Joussard
Boulanger, Mrs. Liliane	Joussard Area Dev. Assoc.	Joussard
Brickwood, Mr. Jim		High Prairie
Buehler, Mr. Clint	AMMSA/Arts	Edmonton
Buffalo, Mr. Pat	Anchor B Communications Inc.	Hobbema
Burkholder, Mr. Harvey	Community Vocational Centre	Slave Lake
Cardinal, Mr. Mike	ID 17 E Advisory Council	Calling Lake
Chartrand, Mr. Bernard	LEAPS	Bonnyville
Christopherson, Mr. Gary	Glomma Cablevision	Grimshaw
Christopherson, Mrs. M.	Glomma Cablevision	Grimshaw
Claydon, Mrs. Betty	Alta. Fed. Home & School Assoc.	High Prairie
Clement, Mr. Doug	Northern Telecom Canada Ltd.	Edmonton
Colley, Mr. Andrew	Regional Economic Dev. Board	Falher
Crisp, Mr. John	Town of Swan Hills	Swan Hills
Desjarlais, Mr. Marvin	Caslan Metis Settlement Assoc.	Caslan
Dextrase, Mr. Gene	Northern Alberta Dev. Council	High Level
Dolemo, Mrs. Rae	Village of Hythe	Hythe
Downey, Dr. Mort	NovAtel	Calgary
Drobot, Mr. John	Northern Alberta Dev. Council	St. Paul
Dutka, Mr. Dick	Canadian Broadcasting Corp.	Edmonton
Elliott, Dr. Bob	Northern Alberta Dev. Council	Grande Prairie
Feltmate, Mr. John	CRTC	Ottawa, Ontario
Finnerty, Mr. Murray	Northern Development Branch	Edmonton
Gingerich, Mr. Fred	Northern Alberta Dev. Council	Athabasca
Goedbloed, Ms Dana	Northern Development Branch	Edmonton
Gongos, Mr. Karl	CVC	Slave Lake
Hancock, Mr. Ron	Economic Development & Trade	Edmonton
Harbourne, Mrs. Del	Town of Manning	Manning
Harvey, Mr. Jim	Alberta Government Telephones	Edmonton

Hay, Mr. Alex	Athabasca University	Athabasca
Heighes, Mr. Jim	Alberta Vocational Centre	Grouard
Hermanson, Mr. Ole	Town of Athabasca	Athabasca
Hillier, Mr. Jack	W. Canada Northern Telecom Ltd.	Edmonton
Hornby, Mr. Bernie	Northern Alberta Dev. Council	Fox Creek
Imrie, Mr. Len	Sexsmith Local TV Association	Sexsmith
Jardine, Mr. Cecil	Northern Alberta Dev. Council	Valleyview
Johnson, Ms Lois	MacKenzie Reg. Planning Comm.	Berwyn
Kawashima, Mr. Junichi	ACCESS	Edmonton
King, Mr. Rob	Economic Development Board	Grimshaw
Klassen, Mr. Bill	Northern Dev. Advisory Council	Prince Albert, Saskatchewan
Kolodychuk, Mr. Brent	Regional Economic Dev. Board	High Prairie
Kratz, Mr. Hans	Alberta Education	Edmonton
Kratz, Mrs. Juliana		Sherwood Park
Kreke, Mrs. Lynn	Northern Development Branch	Peace River
L'Heureux, Mr. Guy	Regional Economic Dev. Board	High Prairie
Larson, Mrs. Patricia	Community Voc. Centre	Slave Lake
Leary, Mr. Jim	Northland School Division	Peace River
Leskiw, Mr. John	ID#18, Municipal Affairs	Lac La Biche
Lovlin, Mrs. Laura	Town of Manning	Manning
MacIntyre, Ms Jeanne	Keyano College	Fort Chipewyan
McDonald, Mr. Jim	Alberta Government Telephones	Edmonton
McFee, Mr. Mike	Slave Lake Chamber of Commerce	Slave Lake
McKeown, Ms Lori	Wabasca/Desmarais Broadcasting	Desmarais
Meaver, Mr. Glen	Anchor B. Communications Inc.	Hobbema
Milligan, Mr. Geoff	Northern Development Branch	Peace River
Moore, Ms Gerry	Athabasca University	Athabasca
Morris, Mr. Steve	AGT — Business Systems	Calgary
Morrison, Mrs. Donna	Athabasca University	Athabasca
Morrison, Dr. Terry	Athabasca University	Athabasca
Nedza, Mr. Paul	Athabasca University	Athabasca
Needham, Mr. Colin	Northern Development Branch	Peace River
Neldner, Mr. Hal	Alberta Government Telephones	Edmonton
Niemi, Mr. Harry	Executech Services Ltd.	Edmonton
Nishikaze, Ms Kim	DRIE	Edmonton
Nystrom, Mr. Roy	MacKenzie Reg. Planning Comm.	Berwyn
Ozoroff, Mr. Nick	Town of Fox Creek	Fox Creek
Page, Mr. Bill	W.J. Page & Assoc. Ltd.	Edmonton
Paul, Dr. Ross	Athabasca University	Athabasca
Pawlak, Mr. Steve	Fairview College	Fairview
Pearcy, Mr. Gordon	CFGP Radio	Grande Prairie
Penner, Mr. Peter		Langley, British Columbia
Peters, Mr. Wilbur	Town of Swan Hills	Swan Hills
Phelps, Ms Evelyn	Government of Yukon	Whitehorse, Yukon
Picard, Ms Janice	Athabasca University	Athabasca
Pickard, Dr. Brent	Alberta Advanced Education	Edmonton
Piquette, Mr. Leo	MLA, Athabasca — Lac La Biche	Plamondon
Piquette, Mr. Paul	Alberta Vocational College	Lac La Biche
Plumb, Dr. Michael	ACCESS — Alberta	Edmonton
Polanski, Mr. Ed	QCTV Cablevision Ltd.	Edmonton

Raju, Mr. Joe		Barrhead
Reid, Ms Arlene	Northern Development Branch	Peace River
Rice, Mrs. Helen	City of Grande Prairie	Grande Prairie
Rice, Mr. Vincent	Northern Alberta Dev. Council	Kinuso
Ritchie, Mr. David	Athabasca University	Athabasca
Rondeau, Mr. Ray	Town of Grimshaw	Grimshaw
Roy, Mr. Danny	NE SS & CH	Lac La Biche
Sawyer, Mr. Geoff	Valleyview REDC	Valleyview
Schinkinger, Mr. Tony	Town of Athabasca	Athabasca
Seaton, Mr. Hugh	Northern Development Branch	Peace River
Sebryk, Mr. Ken	Space Communications Ltd.	Edmonton
Senchuk, Mr. Peter	ACCESS Alberta	Edmonton
Sonntag, Mr. Ted	Northern Alberta Dev. Council	Hotchkiss
Spencer, Dr. Robert	Athabasca University	Athabasca
Stech, Mr. Harry	Business Sales & Service, AGT	Calgary
Sutherland-Nikota,Ms Corrine	Northern Development Branch	Peace River
Teillet, Mrs. Kathy	Northern Development Branch	Edmonton
Trumble, Mr. Brad	QCTV Ltd.	Edmonton
Vandermeulen, Mr. Dan	Alberta Vocational Centre	Grouard
Vanterpool, Dr. Alan	Tech., Research & Telecomm.	Edmonton
Varricchio, Mr. Greg	Northern Development Branch	Peace River
Viau-Caron, Mrs. Rhonda	Northern Development Branch	Peace River
Warmington, Mr. Michael	Alberta Government Telephones	Edmonton
Wilson, Mrs. Lynda	Arctic College	Fort Smith, Northwest Territories
Wintonyk, Mrs. Marg	Athabasca Chamber of Commerce	Athabasca
Wolf, Mr. Robert F.	LSL Indian Reg. Council	Slave Lake
Yellowknee, Mr. Ray	Wabasca/Desmarais Broadcasting	Desmarais
Young, Hon. Les	Tech., Research & Telecomm.	Edmonton